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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/729,349

12/05/2000

TONY LARSSON

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02/09/2005

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EXAMINER

NG, CHRISTINE Y

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/729,349

Applicant(s) **AK**

LARSSON ET AL.

Examiner

Christine Ng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 1-6, 8 and 23-26 is/are allowed.
6) ☒ Claim(s) 9-16 and 20-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 05 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The indicated allowability of claim 9 is withdrawn in view of the newly discovered reference(s) to U.S. Publication No. 2001/0033554 to Ayyagari et al, U.S. Patent No. 6,622,018 to Erekson and U.S. Publication No. 2002/0085719 to Crosbie. Rejections based on the newly cited reference(s) follow.

3. Claims 9 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,691,173 to Morris et al, in view of U.S. Publication No. 2001/0033554 to Ayyagari et al, in view of U.S. Patent No. 6,622,018 to Erekson, and in further view of U.S. Publication No. 2002/0085719 to Crosbie.

Referring to claim 9, Morris et al disclose in Figures 1 and 2 a digital communication system comprising nodes, the nodes including a central node (Figure 1, M2) and at least two peripheral nodes (Figure 1, S3-S5), information only being directly transferred between the central node (Figure 1, M2) and each of the peripheral nodes (Figure 1, S3-S5), the central node (Figure 1, M2) controlling all the communication in the system, and information related to the system itself and/or the individual nodes being stored (Figure 2, table 130) in the central node (Figure 1, M2). The method comprises:

Transferring (using internet management broadcast) information related to the system and/or the nodes to every peripheral node (Figure 1, S3-S5). Based on advertisements from each of the slaves (Figure 1, S3-S5) in a piconet, the master (Figure 1, M2) of the piconet stores information relating to slaves in a network resources table (Figure 2, table 130). The master (Figure 1, M2) then issues an internet management broadcast to the slaves (Figure 1, S3-S5) describing the slaves. Refer to Column 3, line 49 to Column 4, line 8; Column 6, lines 15-60 and Column 7, line 32 to Column 8, line 19.

Morris et al do not disclose wherein transferring the information is performed using the Bluetooth unicast system to each peripheral node in turn.

Ayyagari et al disclose that in a Bluetooth system, unicast messages can be sent to the various devices in a piconet. Refer to Section 0056, lines 1-4. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include that transferring the information is performed using the Bluetooth unicast system to each peripheral node in turn, the motivation being that a unicast transmission allows data to be directed to specific destinations instead of being multicasted to all destinations.

Morris et al also do not disclose wherein transferring the information is performed using the Bluetooth LMP protocol.

Erekson discloses that in a Bluetooth environment, Bluetooth devices communicate with other Bluetooth environments via LMP. LMP provides "a number of services including sending and receiving of data, inquiring of and reporting a name or

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device identifier, making and responding the link address inquiries, communication setup, authentication, and link mode negotiation and setup" (Column 7, lines 48-63).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include that transferring the information is performed using the Bluetooth LMP protocol, the motivation being that LMP is a conventional protocol used for communication of data between Bluetooth devices in a Bluetooth environment.

Morris et al also do not disclose wherein transferring the information is performed using a protocol layer between L2CAP and the network layer, the protocol layer emulating a shared medium network towards the network layer.

Crosbie disclose in Figure 8 a Bluetooth protocol stack wherein transferring the information is performed using a protocol layer (RFCOMM 88) between the L2CAP layer 90 and the network layer TCP/IP 84 and PPP 86, the protocol layer (RFCOMM 88) serving as a shared medium network towards the network layer TCP/IP 84 and PPP 86. The protocol layer RFCOMM 88 is a serial cable emulation protocol that provides emulation of serial ports to allow for communication between Bluetooth devices over a network. Refer to Section 0090. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include that transferring the information is performed using a protocol layer between L2CAP and the network layer, the protocol layer emulating a shared medium network towards the network layer, the motivation being that a protocol between the data link layer L2CAP and network layer TCP/IP provides for facilitating the transmission of data over a network.

Referring to claim 12, Morris et al disclose in Figure 1 that the controls means (internet management broadcast) in the central node (M2) are arranged to transfer address information comprising at least one address of each of the peripheral nodes (Elements S3-S5). Each slave node "transmits an advertisement identifying its address and the services it offers" (Column 3, lines 56-57). The advertisements of all slaves are compiled in an internet management broadcast by the master node. Refer to Column 4, lines 3-8.

Referring to claim 13, Morris et al disclose in Figure 1 that the control means (internet management broadcast) in the central node (M2) are arranged to transfer compatibility related information. Each slave node "transmits an advertisement identifying its address and the services it offers" (Column 3, lines 56-57). Services include "the capability of a given slave node to relay message information to and from one or more outside networks" and "other networks within which the slave node is capable of communication and the services offered by each" (Column 3, line 63 to Column 4, line 2). The advertisements of all slaves are compiled in an internet management broadcast by the master node. Refer to Column 4, lines 3-8.

Referring to claim 14, Morris et al disclose that the direct transferring of information is made wireless, in particular using short range radio waves. The invention of Morris et al is implemented using the Bluetooth wireless communications protocol, which uses short range radio waves. Refer to Column 1, lines 18-25 and Column 3, lines 14-22.

Referring to claim 15, Morris et al disclose that the system is a Bluetooth piconet. The invention of Morris et al is implemented using the Bluetooth wireless communications protocol, which "contemplates the grouping of physically proximate wireless nodes into piconets". Refer to Column 3, lines 14-22.

Referring to claim 16, Morris et al discloses that the transferring of the information is performed using a Bluetooth broadcast mechanism. "Based upon the advertisements received from each slave node, the master node of the piconet issues an internet management broadcast" (Column 4, lines 3-5).

4. Claims 10, 11 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,691,173 to Morris et al in view of U.S. Publication No. 2001/0033554 to Ayyagari et al, in view of U.S. Patent No. 6,622,018 to Erekson, in view of U.S. Publication No. 2002/0085719 to Crosbie, and in further view of U.S. Patent No. 5,768,531 to Lin.

Referring to claim 10, Morris et al does not disclose that part of the information transferred to every peripheral node is derived from information conveyed from the peripheral nodes to the central node when requested by the central node.

Lin discloses in Figure 2A a communication system with a central node (AP, Element 201) that contains a connection list (Element 201a) storing a list of the addresses of all wireless slave nodes (Elements 203 and 204) that it serves. The central node (AP, Element 201) periodically broadcast a copy of the connection list (Element 201a) to each of the wireless stations (Elements 203 and 204) so that the wireless stations can each contain a copy of the connection list (Elements 203a and

204a). Refer to Column 4, lines 3-18 and lines 54-59. Lin discloses that part of the information (connection list, Element 201a) transferred to every peripheral node (Elements 203 and 204) is derived from information conveyed from the peripheral nodes (Elements 203 and 204) to the central node (AP, Element 201) when requested by the central node (AP, Element 201). Each AP may "periodically transmit one or more inquiry messages to the wireless stations and wait for responses". The AP (Element 201) then updates in connection list (Element 201a) depending on whether or not a wireless station responds to the inquiry message, which indicates whether or not the wireless station is still within the AP's service area. Refer to Column 5, lines 24-31. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that part of the information transferred to every peripheral node is derived from information conveyed from the peripheral nodes to the central node when requested by the central node; the motivation being that the central node needs to send out requests to slave nodes to determine which slave nodes are still within its service area so that it can update its connection list.

Referring to claim 11, Morris et al does not disclose that part of the information transferred to every peripheral node is derived from information conveyed from the peripheral nodes to the central node initiated by the peripheral nodes in particular triggered by an event in the respective peripheral node.

Lin discloses in Figure 2A that part of the information transferred to every peripheral node (Elements 203 and 204) is derived from information conveyed from the peripheral nodes (Elements 203 and 204) to the central node (AP, Element 201)

initiated by the peripheral nodes (Elements 203 and 204) in particular triggered by an event (keep alive message) in the respective peripheral node. A "keep alive message is periodically transmitted from each wireless station to each AP in order to keep the AP's connection list up to date". This way, the central node can know which wireless stations are still within its service area. Refer to Column 5, lines 20-24. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that part of the information transferred to every peripheral node is derived from information conveyed from the peripheral nodes to the central node initiated by the peripheral nodes in particular triggered by an event in the respective peripheral node; the motivation being that there needs to be some sort of mechanism that allows wireless stations to notify their serving central node whether or not they are still within the central node's serving area, thereby allowing the central node to update its connection list.

Referring to claim 20, Morris et al do not disclose that the transferring of the information is made when a new peripheral node joins the digital communication system.

Lin discloses in Figure 2A that the transferring of the information (connection list, Element 201a) is made when a new peripheral node joins the digital communication system. When a message from "a wireless station newly entering the service area" is received, the AP (Element 201) adds the address of the newly entered wireless station to the connection list (Element 201a) and then sends the updated connection list (Element 201a) all the slave stations (Elements 203 and 204). Refer to Column 6, lines

51-65. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the transferring of the information is made when a new peripheral node joins the digital communication system; the motivation being that that this allows the wireless stations within a service area to receive an updated account of which stations are newly added to the same service area, thereby facilitating peer-to-peer communication which is only possible if slave nodes are within the same service area. Refer to Column 7, lines 54-58.

Referring to claim 21, Morris et al do not disclose that when a new peripheral node joins the system, the part of the information related to all the other peripheral nodes is transferred from the central node to the new peripheral node.

Lin discloses in Figure 2A that when a new peripheral node joins that system, the part of the information (connection list, Element 201a) related to all the other peripheral nodes is transferred from the central node (AP, Element 201) to the new peripheral node. When a message from "a wireless station newly entering the service area" is received, the AP (Element 201) adds to address of the newly entered wireless station to the connection list (Element 201a) and then sends the updated connection list (Element 201a) all the slave stations (Elements 203 and 204) that are under its service area, including the newly entered slave station. Refer to Column 6, lines 51-65. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that when a new peripheral node joins the system, the part of the information related to all the other peripheral nodes is transferred from the central node to the new peripheral node; the motivation being that that this allows the newly entered

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slave node to receive an updated account of which stations are also within the same service area, thereby facilitating peer-to-peer communication which is only possible if slave nodes are within the same service area. Refer to Column 7, lines 54-58.

Referring to claim 22, Morris et al do not disclose that a message is transferred from the central node to all the peripheral nodes when one of the peripheral nodes has left the system.

Lin discloses in Figure 2A that a message (updated connection list, Element 201a) is transferred from the central node (AP, Element 201) to all the peripheral nodes (Elements 203 and 204) when one of the peripheral nodes has left the system. When "a wireless station moves out of service area, it may leave "gracefully" by sending a disconnect message to the AP to which it is currently connected". The AP (Element 201) thus removes the address of the disconnected wireless station from its connection list (Element 201a) and "the updated connection list is transmitted to all wireless stations". Refer to Column 6, lines 40-50. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that a message is transferred from the central node to all the peripheral nodes when one of the peripheral nodes has left the system; the motivation being that this allows the wireless stations within a service area to receive an updated account of which stations are still within the same service area, thereby facilitating peer-to-peer communication which is only possible if slave nodes are within the same service area. Refer to Column 7, lines 54-58. This situation is common since wireless stations can easily "roam and move into another AP service area" (Column 6, lines 43-44).

Allowable Subject Matter

5. Claims 1-6, 8 and 23-26 are allowed.


Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng CW
February 3, 2005


RICKY NGO
PRIMARY EXAMINER
2/3/05